

REMARKS

Rejection under 35 U.S.C. §112

Claims 11, 12, 46 and 47 have been rejected under 35 U.S.C. §112 paragraph 2. Claims 11 and 12 have been amended for greater clarity and are now directed at the method of claims 10 and 11, respectively. Furthermore, claim 1 has been amended for greater clarity to include that the nanosized catalytic particles are “applied by an application method...”. As such, the Applicant submits that both claims 11 and 12 are therefore clear and meet the requirements under 35 U.S.C. §112.

As per the Examiner’s suggestion, claims 46 and 47 have been cancelled.

Rejection under 35 U.S.C. §102

Claims 1, 2, 8, 10 to 14, 20 to 22, 25, 26, 29 to 31, 37 to 39, 40 to 43, 46 and 47 are rejected under 35 U.S.C. §102(b) as being anticipated by Smiljanic et al. The Applicant respectfully requests reconsideration. The claims on file have been amended for greater clarity. Particularly, claims 1, 3, 13, 15, 29 and 32 have been amended to include the feature that the substrate comprises “a uniform supporting layer”. Support for this amendment is found at least at page 5, last paragraph bridging page 6.

Furthermore, claims 1, 13 and 29 have been further amended to include the feature that the catalytic particles are applied “in a bi-dimensionally organized monolayer on the uniform supporting layer”. This amendment is supported at least at page 5 (fourth paragraph).

Smiljanic et al. teach a catalytic decomposition of carbon base materials to obtain carbon nanotubes where the catalytic metal nano-particles are obtained by a reaction of metal precursor impregnated with oxides or zeolites or deposited on a support like SiO₂/Si. As such, the claims on file now teach a substrate comprising a uniform supporting layer that is neither taught nor suggested by Smiljanic et al. As such, the Applicant submits that the claims on file are not anticipated by Smiljanic et al.

The rejection of claims 1, 2, 8, 10 to 14, 20 to 22, 25, 26, 29 to 31, 37 to 39, 42, 43, 46 and 47 is that they are anticipated by Dodelet et al. (U.S. Patent 6,887,451). The Applicant respectfully requests reconsideration. Dodelet et al. teach the production of carbon nanotubes using a silane procedure in which the substrate is either carbon paper or stainless steel immersed in a silane solution of metal catalyst. Dodelet et al. do not teach the need for a substrate with a uniform supporting layer required by the claims presently pending. As such, the Applicant submits that the claims on file are neither taught or rendered obvious by Dodelet et al. Reconsideration is respectfully requested.

Rejection under 35U.S.C. §103

The Applicant wishes to submit that the claims on file are all commonly owned by the inventors, as has been assumed by the Examiner.

The rejection of claims 3 to 5, 15 to 17 and 32 to 34 is that they are unpatentable over Smiljanic et al. in view of Takikawa et al. (U.S. 2003/0188963 A1). Then Applicant has already described the features of Smiljanic et al. However, the Applicant submits that Smiljanic et al. neither teach nor suggest a substrate that includes a uniform supporting layer.

Takikawa et al. teach a graphite cathode and anode placed opposite each other through an insulating plate having a notch. Here too, there is no suggestion of requiring a substrate with a uniform supporting layer. Furthermore, the uniform supporting layer helps to produce an advantage that the nanotubes are organized and grow in a particular direction outward from the mat, that is clearly not the case with Smiljanic et al. (see Fig. 4A), or Takikawa et al., (Fig. 9). As such, no combination of Smiljanic et al. of Takikawa et al. render obvious the claims on file.

Claims 3 to 5, 15 to 17 and 32 to 34 are rejected under 35U.S.C §103(a) as unpatentable over Dodelet et al. in view of Takikawa et al. Once again, no combination of these two references teaches the new and inventive features found in the amended claims. The Applicant respectfully requests reconsideration.

Claims 23, 24, 40 and 41 are rejected under 35U.S.C §103(a) as unpatentable over Smiljanic et al. in view of Loutfy et al. (U.S. 2003/0082094 A1). The Applicant respectfully requests reconsideration.

Loutfy et al. teach a single-walled carbon nanotube selected to be produced to the substantial exclusion of multi-walled carbon nanotubes. Once again, there is no indication that the substrates include a uniform supporting layer. Therefore, no combination of Smiljanic et al. and Loutfy et al. produce the combination of novel inventive features presently found in the pending claims. Reconsideration is respectfully requested.

Claims 22, 24, 40 and 41 have been rejected under 35U.S.C §103(a) as unpatentable over Dodelet et al. in view of Loutfy et al. The Applicant respectfully submits that no combination of Dodelet et al. or Loutfy et al. produce the features presently pending in the claims, particularly a method and a nanotube growing mat that produces nanotubes that grow in a particular direction. Reconsideration is respectfully requested.

The Applicant has voluntarily corrected small clerical errors in claims 5, 17 and 23.

The Applicant submits that a similar amendment to the claims was made during the International Phase but was not received in the United States Patent and Trademark Office.

The Applicant respectfully submits that the application is now in condition of allowance and early and favourable action is requested.

Favourable consideration of the application is respectfully requested.

Respectfully submitted,

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Date

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